

るとうないないないないないないないないないないないないないないないない

GRAND CENTRAL PALACE, NEW YORK

GENERAL ILLUMINATION COURSE

JANUARY 1930

ASSIGNMENT No. 6

CONTENTS

DISPLAY LIGHTING



WESTINGHOUSE LAMP COMPANY

ENGINEERING AND TECHNICAL DATA PREPARED
BY THE COMMERCIAL ENGINEERING DEPT. OF THE
WESTINGHOUSE LAMP CO., BLOOMFIELD. N. J.

DISPLAY LIGHTING

wantage. It should also be seen by the greatest possible number of people. Light will aid in accomplishing both of these results. It enhances the appearance of the merchandise and attracts the passerby to it.

An effective display should be so lighted that it will stand out in contrast to its surroundings. In illuminating displays, light sources and lighting equipment should be carefully concealed from view.

Modern show windows, show cases and wall cases each have approximately the same general proportions and may utilize standardized lighting installations. It is possible to give simple and definite recommendations, thus making elaborate or complicated calculations unnecessary. Various types of reflecting equipment insuring efficient utilization of the light and giving satisfactory results are commercially available.

Show Window Lighting

Merchants endeavor to locate their stores on not only the busiest streets but also on the busiest side of the street. This is done so that the greatest possible number of people may see the merchandise. Investments in window space are only justified by properly illuminating the merchandise as long as pedestrians are on the street to see it. This may be done even after the store is closed. Automatic time switches will turn the lights off at any desired hour.

Daylight, especially bright sunshine, often produces reflections in polished plate glass fronts of show windows that detract from
and even obscure the merchandise on display. It, therefore, is not only
necessary to make use of the lighting equipment during the day but in
some cases to provide additional equipment of higher intensity.

THE PERSON NAMED IN COLUMN TWO IS NOT THE OWNER.





Since displays should stand out in contrast to their surroundings the intensity of illumination required in any particular window will depend upon the brightness of the locality in which it is situated. The following table gives recommendations for the wattages of lamps and spacings of outlets for show windows on main and side streets in cities of different sizes. These recommendations are for night illumination and can be appropriately supplemented by spot lighting, flood lighting and footlights.

SPACING OF REFLECTORS AND SIZE OF LAMPS FOR SHOW WINDOW ILLUMINATION

Population of City or Town	Location of Store	Spacing of Reflectors (Inches)	Size of Mazda Lamps (Watts)
5000 or less	Main Streets	15	150
	Side Streets	18	150
5000 to 50000	Main Streets	12	150 - 200
	Side Streets	15	150
Above 50000	Super White Way Metro. Dist. Main Streets Side Streets	15 12 12 12	500 200 150 - 200

Results of independently conducted investigations all point to the same general conclusion, that increased intensities of light increase the pulling power of windows. More people will stop to view a well filluminated display, the number varying almost directly with the amount of light provided.

Show window illumination must be designed so as to conceal the light sources from the vision of the spectators. Bare lamps without proper reflectors result in an inefficient use of light, unslightly shadows on the display and glare in the eyes of the passerby. The outlets should be installed in a vertical position along the front upper edge of the window. Each outlet should be equipped with either prismatic, polished metal, or mirrored glass reflectors designed for show window service.

THE RESERVE THE PARTY OF THE PA

The shape of reflector used depends upon the proportions of the window and can be readily selected from the manufacturers' catalogue information.

The background of the window should be finished in light colors of a non-glossy character. Glossy surfaces cause annoying light source reflections and dark backgrounds absorb a large quantity of light. The use of warm gray, cream white and caen stone shades is considered good practice.

The equipment itself should be concealed from view by either a valance between the reflectors and the window, or by recessing the equipment in the ceiling. In corner or open back windows, the reflectors should be concealed from side or rear view by an additional valance in the rear. Where it is necessary to shield or soften the brightness of the light source, louvers or prismatic glass cover plates should be employed.

Opportunities for interesting and attention-compelling lighting effects in show windows approach theatrical possibilities. Footlights of approximately one quarter the strength of the overhead lights are used to soften any shadows. Floodlights are used to light an important part of the exhibit to an unusually high intensity. Particular objects are spot lighted in either clear or colored light to contrast with the surrounding merchandise or background. For these special effects equipment should be installed near the front corners of each window, and, if the window is large, at other strategic points. Spotlights or floodlights, like other window lighting equipment, should be provided with adapters and color filters for color emphasis.

The illustrations on page 83 show the advantages of using artificial lighting during the day. A display in an unlighted window or in one using only several spot lights for daytime illumination (top illustration) must compete with the reflections from opposite buildings, passing traffic and pedestrians. The intensity used for night lighting (center illustration) makes a decided improvement in the appearance of

THE PROPERTY OF THE PARTY OF THE PARTY OF





The property of the property o

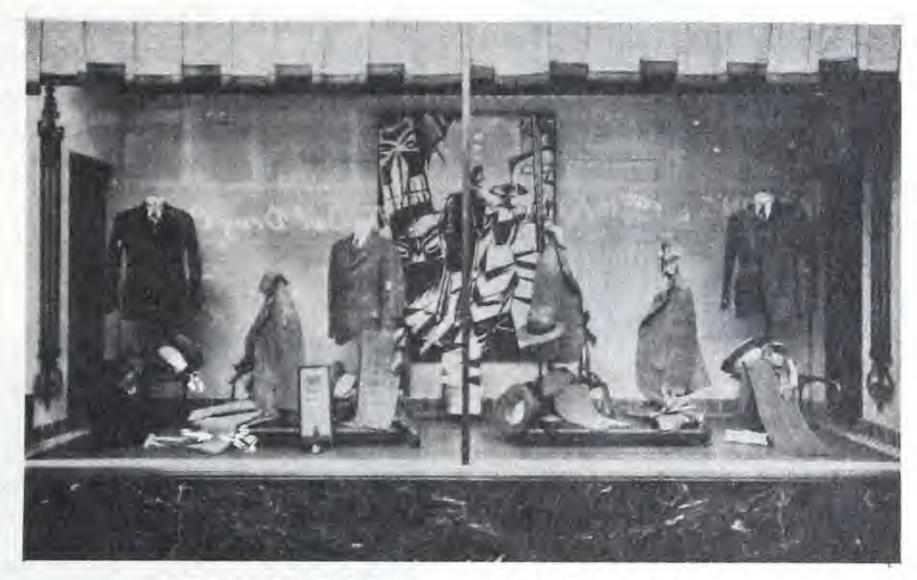
THE RESIDENCE OF THE PROPERTY OF THE PARTY O

THE RESIDENCE OF THE PARTY OF T

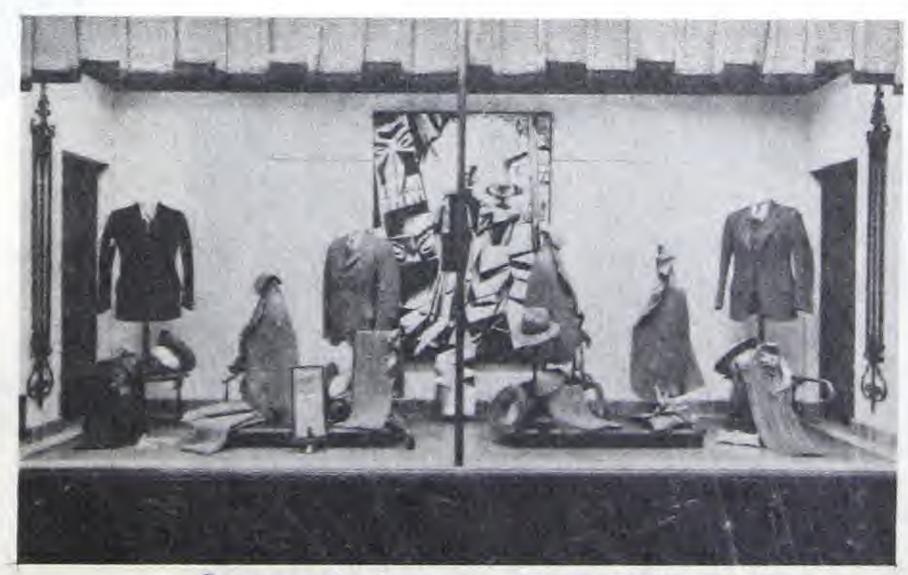
, division to the second of th



Typical daylight reflections. Three 200 watt spotlights only artificial lighting used.



Same window. Artificial Lighting. Ten 200 watt lamps with mirrored glass reflectors on 20" centers.



Same window. Ten 200 watt and nine 300 watt lamps alternated on 10" centers in mirrored glass reflectors.



Reflections in the glass fronts of unlighted show cases detract from and sometimes obscure the merchandise on display.

Individual reflectors of mirrored glass on 20 inch centers and equipped with 25 watt Mazda lamps aid in making an appealing display.





Trough reflectors with tubular Mazda show case lamps facilitate the inspection of the goods.

Diffusing glass panels in the top of this wall case illuminate the complete interior and attract attention to the merchandise on exhibit.



the window. A higher illumination from additional equipment, (lower illustration), practically eliminates all daytime reflections. Light colored backgrounds in windows will also help in reducing the daylight reflections. Several large New York Department Stores employ 500 watt lamps on 18" centers in their show windows. These practically eliminate daytime reflections and, being wired on two or more circuits, allow the use of from one half to one third of the installation for window lighting at night.

Show Case Lighting

Show cases of both the counter and wall types are in reality miniature show windows and should be properly illuminated. The ineffectiveness of unlighted show case displays is illustrated at the top of page 84.

Show cases, as their name implies, are for showing and not storing merchandise. If sufficiently illuminated, careful inspection may be made of their contents without moving or handling the articles. Show cases require approximately four times the intensity of the general store illumination. The lighting equipment should be installed along the front upper edge of the case. It is not as a rule practicable to conceal show case reflectors with a valance as in show windows. Manufacturers have, however, so designed and constructed their equipment that it is small and inconspicuous.

Either the individual show case reflector or the trough type reflector may be satisfactorily employed. Individual reflectors are usually installed on 12 to 24 inch centers with 25 watt A-19 Mazda lamps. Where a relatively higher illumination is provided in the store itself or where dark goods are displayed, the 40 or 50 watt A-21 Mazda lamps should be used.

Trough type reflectors are usually installed with the 25 watt $T-6\frac{1}{2}$ intermediate base or the 25 watt T-10 medium base Mazda lamps on 12, 18 or 24 inch centers. The 40 watt T-8 Mazda lamp should be used where a higher illumination is desired.



END SERVICE OF A PROPERTY OF

THE PART OF THE PA

PERSONALLY FOR THE STATE OF THE

THE REST OF THE PARTY OF THE PA

HAT MY SELL TO SELL THE SELL T

product to the day to be a second to the sec



- The state of the

An exception to the usual practice of installing lighting equipment as described above is in the illumination of displays of candy, wax ornaments, etc. Such merchandise is affected by the heat of inside lighting equipment and small decorative lamps of the portable type should be placed on top of the case.

Wall Case Lighting

Illumination in wall cases should be two or three times the intensity of the general store illumination. Such cases can be illuminated with small individual reflectors similar to the types used in show windows, employing 60 watt Mazda lamps on 24 inch centers for the usual installation. Another method which is suitable and less conspicuous is the use of lighting equipment over diffusing glass panels in the top of the case. These should be located near the front, be 12 inches deep and extend the entire length of the case. 60 watt A-21 Mazda lamps should be located on 18 to 24 inch centers and placed horizontally about 5 inches above the glass. To secure maximum utilization of light, lamps should be covered by metal or wooden housings finished in white on the inside.

Color Lighting

of merchandise. It may be advantageously employed to enhance the appearance and increase the attraction of displays by adding depth and tone to the inherent colors of the merchandise in connection with which it is used. Color should, however, be used with discretion and with an understanding of color harmony.

Where color is properly used it need not be obvious. The result of its presence should create the feeling that the merchandise looks particularly attractive. To accomplish this, color screens or caps should be installed after the window is trimmed in order to accentuate the predominating colors of the materials on display. For example a window display of evening gowns may consist of garments of several different hues.

The Real Property lies and the last terms of the

ALTONO THE RESERVE

THE RESERVE

In order that each may appear to its best advantage the window should be flooded with clear light and then color similar to the merchandise itself directed on the principle displays. Where there is one predominating color, as in displays of pink lingerie, or blue shirts, a slight touch of red light in the former, and blue light in the latter instance, will give a richer, more appealing appearance to the merchandise.

There is a surprising difference in the appearance of a display under clear or unmodified light as compared with one of similar character under light to which a touch of color has been added. Sometimes color devices on one or two of the existing window units will be sufficient to obtain effective results. All standard show window reflectors may be equipped with color producing media. Some are furnished with attachments for gelatin or glass screens fastened to the rim on the bottom of the reflector; others secure color by means of glass caps or hoods which are attached to the lamp bulb.

Care must be taken when planning a color lighting scheme, to provide enough wattage to offset the absorption of colored media.

Sufficient wiring capacity should be installed to permit the use of the next larger size of lamp than that recommended in the table on page 81.



APPENDED TO THE RESERVE OF THE PARTY OF THE

The first water to the second of the second

A SERVICE PROPERTY AND A SERVICE PROPERTY OF THE PROPERTY OF T



QUESTIONS

- What are the fundamental lighting principles to be observed in planning the lighting of a show window?
- 2. Why are higher wattages required for show windows located on main streets than for those situated on side streets?
- 3. What should color lighting accomplish in a show window and how should it be provided?
- 4. When should show windows be illuminated during the day?
- 5. What is the advantage of lighting show cases?

REFERENCES

Lighting of Show Windows During Daylight Hours.

O.R. Hogue - Charles Howard - E.D. Tillson

Transactions of the I.E.S. - Vol. 20, pg. 1100, 1925.

Display Window Lighting - Godinez The William T. Comstock Co.

Color and Its Applications - Luckiesh
D. Van Nostrand Co.

Economic Value of Good Lighting in Show Windows and Store Interiors - A.S. Turner, Jr.
Transactions of the I.E.S. - Vol. 22, pg. 152, 1927.

Display Case Lighting in Stores J.L. Stair and Wm. Foulke.
Transactions of the I.E.S. - Vol. 20, pg. 113, 1925.

The Practical Value of Good Store and Show Window Lighting.
A.A. Brainard and F.C. Winters.
Transactions of the I.E.S. - Vol.22, pg. 165, 1927.

9 THE RESERVE OF THE PROPERTY OF







